

WEST Search History

DATE: Wednesday, March 02, 2005

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<input type="checkbox"/>	L1	713/168-175,202,159,183-186,200.ccls.	6500

END OF SEARCH HISTORY

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02279331 SUPPLIER NUMBER: 54142790 (THIS IS THE FULL TEXT)
Plastic fantastic.(smartcards)(Technology Information)
Computer Weekly, 43(1)
March 11, 1999
ISSN: 0010-4787 LANGUAGE: English RECORD TYPE: Fulltext
WORD COUNT: 1162 LINE COUNT: 00094

TEXT:

One of the biggest problems users face in the information age is the bulging wallet. But this could all change with the wide acceptance of smartcards, writes Bob Walder

Wouldn't it be nice if users only had to carry one card? This would allow them to make purchases, borrow a library book and make a phone call. It could even be used to gain access to a place of work, and allow the holder to participate in a few well-chosen store loyalty schemes. Plus it would contain driving licence, passport, National Insurance, personal and medical records.

This is all possible thanks to smartcards. Similar in appearance to a standard credit card, the smartcard sports a 10mm square gold-coloured computer chip.

Most people are already familiar with the smaller format smartcards used in cellular phones, known as Subscriber Information Module (SIM) cards. The most common implementation of the full-size card in the UK is that used as a "viewing card" for satellite TV services.

Smartcards are already considered "everyday" items in many European countries. More than 100 million pay phone cards and 22 million bank cards are in use in France; 80 million health insurance cards have been issued in Germany; 50 countries have implemented pay phone technology; and over 20 countries are using some form of electronic wallet.

Depending on the designated function of the smartcard, the on-board chip can consist of anything from simple Eprom memory (ie in the case of a phone card) to a full-blown tamper-proof "computer-on-a-chip", including an 8-bit microprocessor, Ram, Rom and Eprom.

The on-board CPU can process, share and store information, allowing the card to be used in a variety of applications. As well as being able to store much more information than the standard magnetic strip card, the key advantage to smartcard technology is the ability to process information in line with preprogrammed guidelines. This "programmability" provides the flexibility required to allow the card to assume multiple "personalities" - as a library ticket one minute, and an electronic purse the next.

In the future, it should even be possible for multiple applications stored on the same card to interact with each other. Smartcards also provide us with so much more in the way of security than has been hitherto available with software-only solutions. They provide an additional "physical" level of security over and above that offered by the usual password protection mechanisms.

For instance, if a password is compromised, it is a simple matter for an unauthorised user to gain access to a protected system. When access to that system. also requires the physical presence of a smartcard in a card reader (coupled with the entry of a personal identity number to provide access to that card), life is made that much more difficult for the would-be hacker.

Another benefit of smartcards is their ability to store a user's personal encryption keys and digital certificates. The fact that almost any number could be stored securely within a card means that a separate key can be issued per application per user. It also means we can use keys of the

maximum length allowed by law in any given country, without having to rely on manual entry by the user.

Once the keys and certificates are safely stored within the card memory, they become completely portable, whereas at the moment, a user's digital certificate is often locked to a particular application on a single machine - say a Web browser on a PC at the office. It is even possible for the encryption process to be performed by the card, which is often far more secure than a PC.

The portability and security factors combine to make smartcard technology suitable for a wide range of applications for the general public, including customer loyalty schemes, electronic banking, travel and transport, online services, electronic cash and payment mechanisms.

In the enterprise, there are obvious applications such as physical access control to buildings and secure areas, and logical access control to networks and other resources.

Many people will already be familiar with the SecurID card from Security Dynamics, a hardware-based access token. Security Dynamics has recently introduced the SecurID 1100 Smart Card, the first smartcard to work with its Ace/Server strong authentication enterprise security solutions.

The new smartcard combines security with convenience, enabling organisations to use a single card to protect network and application resources from unauthorised access as well as for corporate identity, physical security, loyalty, electronic purse and other applications.

Based on the Gemplus MPCOS multi-application microprocessor card, the SecurID 1100 Smart Card provides the Ace/Server authentication as well as offering more than 7Kbyte of free Eprom memory space for additional applications.

This moves us a small step closer to having a single card for everything, though there is still an awful long way to go before we can throw away our bank cards, driving licence and passport and replace them all with a single piece of plastic - however smart it may be.

What the smartcardjargon means

- * Smartcard - also called an integrated circuit or IC card, with a plastic body with a chip embedded in a special cavity.

- * Contact smartcard - operates by making physical contact between the card reader and the smartcard's contacts

- * Contactless smartcard - communicates via an antenna using a radio frequency signal. No physical contact is required between the card and a card reader

- * Electronic purse - any small portable device which stores data with a monetary value. The smartcard is the ideal device to implement an electronic purse. It is sometimes called the electronic wallet or the stored value card.

- * Security access module - is the dedicated microprocessor unit that allows the card reader to authenticate the user's identity.

- * Subscriber information module (Sim) - a specific type of smartcard for GSM systems holding the subscriber's ID number, thus allowing him to call from any GSM device.

Summary

Smartcards can contain both memory software and a processor, allowing them to act as pure repositories or to run on-board applications.

There are two main types of cards - contact and contactless. The first requires physically inserting in or swiping by a card reader. The second merely needs to pass within the vicinity of a reading device.

New cards are appearing that will allow several applications to be stored and run on a single card. This allows the card to act as a passport one minute, and an electronic wallet the next.

New smartcard applications will enable a wide range of facilities on the next generation of "smart phones", allowing you to browse the Web and

order goods using just your cell phone.

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GEOGRAPHIC CODES/NAMES: 4EUUK United Kingdom

DESCRIPTORS: Smart card; Technology development; Technology application

EVENT CODES/NAMES: 390 Nonmanufacturing technology

PRODUCT/INDUSTRY NAMES: 3679120 (Magnetic Cards)

SIC CODES: 3679 Electronic components, not elsewhere classified

NAICS CODES: 334613 Magnetic and Optical Recording Media Manufacturing

FILE SEGMENT: CD File 275

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